

# **Mineral Industry Surveys**

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## PRECIOUS METALS IN SEPTEMBER 1999

U.S. mines produced 28,800 kilograms (kg) of gold and 156,000 kg of silver in September 1999. Compared with August, silver production was up by 22% in Nevada.

## Gold

**Domestic.**—Franco-Nevada Mining Corp. Ltd. approved plans to increase its Ken Snyder gold-silver mine production from 7,800 kg per year gold equivalent to 9,300 kg per year gold equivalent. Existing crushers, counter-current thickeners, and Merrill-Crowe circuits will be modified, and a new 350,000 kg-per-day vertical mill grinding circuit will be installed. Work is expected to be completed in the first half of 2000 (Mining Journal, 1999b).

International.—Russian gold producers expressed concern about the effect that a proposed discount rate hike by the Central Bank of Russia will have on precious metals prices and sales. Effective October 1, the Central Bank increased the discount rate for gold and platinum from 2% to 5%. Since Russia also has a 5% export duty on precious metals, commercial Russian banks are more likely to export gold and platinum than sell to the Central Bank, leaving Russian gold producers with fewer sales options and uncertain financing opportunities. The Central Bank has been expected to buy between 60,000 kg and 80,000 kg of gold (Platt's Metal Week, 1999b).

The dramatic rally in the gold market halted on September 30, with gold prices consolidating around \$301-\$304 per ounce, which was down \$10 per ounce from the 2-year high achieved on September 29. During the rally, the European central bank raised gold lease rates from 4% to 10% in reaction to a flood of requests for gold loans to offset short positions. Less than a year before, gold lease rates were only 1% (Metal Bulletin, 1999a).

A local court in Johannesburg has delayed the plan of Placer Dome Inc. to lay off about 40% of the work force at South Africa's Western Areas gold mine. Placer Dome's plan was to trim \$2.47

million per month from its overall operating costs by shedding 2,900 workers (American Metal Market, 1999).

*Update.*— South African gold miner Anglogold is interested in Ghanaian gold producer Ashanti Goldfields' assets. On October 21, Anglogold issued a statement stating that it has begun collecting fundamental information to study the possibility of acquiring Ashanti (Platt's Metal Week, 1999a).

#### Silver

Sunshine Mining and Refining Co. has been issued an operating permit for its Pirquitas silver mine in Argentina following approval of its environmental impact statement by the Jujuy provincial authorities. Sunshine is planning to reopen the mine as a bulk tonnage, open-pit operation, using a combination of gravity and flotation methods in the concentrator. Mine waste will be stored in a dump adjacent to the open pit, and tailings from the plant will be stored in a conventional dike for the fine material and in a dry stack for the coarse material. Sunshine increased the reserve base at Pirquitas earlier this year to 22.8 million tons grading an average 189 grams (g) silver per ton, 0.3% tin and 0.61% zinc, for a total metal content of 116 million ounces of silver, 70,800 metric tons (t) of tin and 123,500 t of zinc. The higher reserves prompted Sunshine to increase planned daily throughput capacity to 6,000 tons per day (tpd) from the 5,000 tpd envisioned in an earlier feasibility study. Annual output will be in excess of 9 million ounces of silver at a cash cost of \$1.50 per ounce net of byproduct credits. At the expected rate of ore extraction, Pirquitas will have a mine life of around 10 years, with production expected to commence in mid 2001 (Metal Bulletin, 1999b).

#### **Platinum-Group Metals**

Kroondal Platinum Mines Ltd. planned to bring its Kroondal platinum project in the western Bushveld complex into production

and reach full production in January 2000. Located 90 kilometers west of Pretoria near the town of Rustemburg, the Kroondal property has identified resources totaling 4.5 million troy ounces of PGM. At peak production, the Kroondal Mine reportedly will produce 100,000 ounces per year of platinum, 50,000 ounces per year of palladium, and 15,000 ounces of rhodium. Aquarius Platinum Ltd., a 45% shareholder in the mine, manages the project (Engineering & Mining Journal, 1999).

*Update.*—In November 1999, the Russian Parliament began considering an amendment to last year's budget legislation that would enable the export of platinum. The amendment passed all three readings in the Lower House and must move to the Upper House of the Russian Parliament, the Federation Council, where its approval is seen as a formality before going before the Russian President for signing. If the President signs the legislation, he must then issue export quotas for platinum, and the Russian Trade Ministry will then issue export licences. Only at that point can Russia's sole official export agency of platinum, Almazjuvelirexport, proceed with exporting the metal. In 1998, Russia contributed about 25% of world platinum supply (Mining Journal, 1999a).

On December 3, 1999, the Defense National Stockpile Center (DNSC), Fort Belvoir, VA, announced the aggregated November PGM sales results under the Basic Ordering Agreement, DLA-PGM-001. In November 1999, DNSC sold:

Palladium 2,093.454 kg Platinum 1,215.930 kg for an overall value of \$42.5 million. The companies that were awarded material in November are: Degussa-Hüls Corp., Ridgefield Park, NJ; Heraeus Precious Metals Management, Inc., New York, NY; Johnson Matthey Inc., Wayne, PA; and LFG, Chicago, IL. Additional information is available at the DNSC website at www.dnsc.dla.mil. For other inquiries, call Cheryl Deister at (703) 767-5475 (Defense National Stockpile Center, 1999).

## **References Cited**

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- ———1999b, Ken Snyder gains flexibility: Mining Journal, v. 333, no. 8554, October 22, p. 326.
- Platt's Metals Week, 1999a, Anglogold eyes Ashanti assets, closes in on Acacia: Platt's Metals Week, v. 70, no. 43, October 25, p. 1.
- ———1999b, Russian gold producers fear fewer sales options: Platt's Metals Week, v. 70, no. 42, October 18, p. 9.

TABLE 1 MINE PRODUCTION OF RECOVERABLE GOLD AND SILVER IN THE UNITED STATES, BY STATE 1/

# (Kilograms)

				Other	
Gold	Alaska	California	Nevada	States 2/	Total
1998:					
September	1,780	1,850	26,200	4,620	34,400
October	1,280	1,850	25,700	4,910	33,800
November	1,280	1,840	25,000	4,750	32,800
December	1,280	1,830	25,500	5,040	33,700
January-December	18,300	18,700	273,000	56,200	366,000
1999:	_				
January	1,250	1,340	21,400 r/	4,050 r/	28,100 r/
February	1,130	1,170	20,700 r/	3,720 r/	26,800 r/
March	1,250	1,440	20,900 r/	4,300 r/	27,900 r/
April	1,810 r/	1,440	21,400 r/	4,380 r/	29,000 r/
May		1,460 r/	21,700 r/	4,200 r/	29,200 r/
June	1,810 r/	1,520 r/	22,600 r/	4,300 r/	30,200 r/
July	1,900 r/	1,420 r/	20,100 r/	4,390 r/	27,800 r/
August		1,350 r/	21,100 r/	4,340 r/	28,700 r/
September	1,860	1,370	21,300	4,290	28,800
January-September	14,700	12,500	191,000	38,000	256,000
				Other	
Silver	Arizona	Idaho	Nevada	States 3/	Total
1998:					
September	18,100	36,200	79,300	65,200	199,000
October	17,300	36,200	64,100	63,000	181,000
November	14,400	36,200	69,800	61,000	181,000
December	15,700	36,200	97,800	62,300	212,000
January-December	211,000	447,000	670,000	736,000	2,060,000
1999:					
January	15,400	34,100 r/	48,100 r/	63,000	161,000
February	14,700	30,800 r/	49,000 r/	55,200	150,000
March	17,600	34,100 r/	67,100 r/	59,900	179,000
April	16,500	34,100 r/	46,000	69,600	166,000 r/
May	16,800	35,200 r/	42,400	65,700	160,000
June	16,200	34,100 r/	48,100	67,600 r/	166,000 r/
July	16,600	35,200 r/	36,700 r/	68,500	157,000
August	14,300	35,200	36,600	64,700	151,000 r/
September	13,600	34,500	44,600	63,200	156,000
January-September	142,000	307,000	419,000	577,000	1,440,000

r/ Revised.

 $<sup>1/\,\</sup>mbox{Data}$  are rounded to three significant digits may not add to totals shown.

<sup>2/</sup> Includes Arizona, Colorado, Idaho, Montana, New Mexico, South Carolina, South Dakota, Utah, and Washington.

<sup>3/</sup> Includes Alaska, California, Colorado, Missouri, Montana, New Mexico, New York, South Carolina, South Dakota, Tennessee, Utah, and Washington.

## TABLE 2 SELECTED PRECIOUS METAL PRICES

# (Dollars per troy ounce)

	Gold	Silver	Platinum	Palladium
Engelhard Industries:				
1998:				
Year				
Low/date	274.52 (August 28)	4.72 (August 31)	337.40 (October 30)	205.00 (January 6)
High/date	314.33 (April 24)	7.25 (February 6)	434.00 (April 14)	417.00 (May 18)
Average	295.24	5.54	374.61	289.76
1999:				
August:				
Low/date	253.93/25	5.08/30	346.00/2 and 16	337.00/2 and 30
High/date	262.39/18	5.48/4	356.00/5	351.00/90
Average	257.65	5.29	352.96	344.50
September:				
Low/date	255.28/2	5.13/20	349.00/2	344.00/1
High/date	308.17/29	5.75/28	410.00/29	392.00/29
Average	266.33	5.28	373.24	367.00
October:				
Low/date	291.74/27	5.19/21	405.00/6	381.00/18
High/date	326.70/5	5.63/1	440.00/14	399.00/12
Average	311.90	5.42	423.00	391.00
Year to date				
Low/date	253.88 (July 20)	4.91 (January 4, April 14,		
	•	May 28, and June 4)	344.00 (January 28)	293.00 (May 4)
High/date	326.70 (October 5)	5.75 (September 28)	457.00 (November 16)	420.00 (November 11)
Average	279.22	5.25	372.99	357.07
Handy and Harman:				
1998:				
Average	294.12	5.53	XX	XX
1999:				
September	265.23	5.28	XX	XX
October	310.72	5.42	XX	XX
November	292.74	5.19	XX	XX
Average year to date	278.09	5.25	XX	XX
London Final: 1/				
1998:				
Average	294.16	5.55	XX	XX
1999:				
September	264.74	5.23	XX	XX
October	310.72	5.41	XX	XX
November	293.18	5.16	XX	XX
Average year to date	278.20	5.22	XX	XX
VV N-+1:1-1-	=70.20			

XX Not applicable.

1/ Silver price reported as "London Spot/US Eq."

Source: Platt's Metals Week.

# $\begin{tabular}{ll} TABLE & 3 \\ U.S. & IMPORTS & AND & EXPORTS & OF GOLD & 1/2 \\ \end{tabular}$

(Kilograms of gold content, unless otherwise specified)

Period and country	Ores and concentrates 2/	Doré and precipitates	Refined bullion 3/	Ash and residues	Total 4/	Waste and scrap	Metal powder (gross weight)	Gold compounds (gross weight)
Imports for consumption:	concentrates 2/	precipitates	bullion 3/	residues	10ta1 4/	(gross weight)	(gross weight)	(gross weight)
1998	2,540	14,100	257,000	4,670	278,000	16,700	12,800	9,820
1999:	2,540	14,100	237,000	4,070	270,000	10,700	12,000	7,020
June	3	1,890	12,800	34	14,700	1,340	153	251
July	4	2,260	17,800	2	20,000	1,340	432	751
August:		2,200	17,000		20,000	1,5.0		701
Argentina		167			167			
Australia	1	1,700	485		2,180			
Austria			193		193			
Brazil			3,590		3,590			
Canada			8,630	5	8,640	1,890	267	
Chile	<u></u>	244	499		743			
Colombia			774		774	119		481
Costa Rica			21		21	192		
Dominican Republic	<u></u>		40		40	452		
Honduras		104	26		127			
Japan								122
Mexico		422	98	1	521	217		
Nicaragua		14	210		224			
Peru	2	499	573		1,070			
South Africa			1,520		1,520			200
Switzerland			927		927			
Ukraine			407		407			
United Kingdom			1,210		1,210			48
Other			113		113	80	33	91
Total	3	3,150	19,300	6	22,500	2,950	300	942
Year to date	92	14,600	130,000	96	145,000	14,600	3,610	4,590
Exports:								
1998	401	91,600	430,000		522,000	58,900	196	781,000
1999:								
June		6,450	28,500		35,000	2,220	8	161,000
July	20	6,800	6,420		13,200	2,600	25	25,100
August:								
Belgium						211		
Canada		554	43		597	1,820		16,800
Hong Kong			154		154			
Israel							2	8,960
Mexico			2,850		2,850			
Peru			557		557			
Switzerland		6,480	7		6,480			
Taiwan			552		552			
United Kingdom			32,800		32,800		5	223
Other		12	75		87	159	2	115
Total		7,040	37,100		44,100	2,190	9	26,100
Year to date	106	53,100	143,000		196,000	19,800	179	475,000

<sup>1/</sup> Data are rounded to three significant digits; may not add to totals shown.

<sup>2/</sup> Includes gold content of base metal ores, concentrates, and matte imported for refining.

<sup>3/</sup> Bullion also moves in both directions between U.S. markets and foreign stocks on deposit in the Federal Reserve Bank. Monetary gold excluded.

<sup>4/ &</sup>quot;Waste and scrap," "Metal powder," and "Gold compounds" not included in "Total."

 ${\bf TABLE~4} \\ {\bf U.S.~IMPORTS~AND~EXPORTS~OF~SILVER,~REFINED~AND~AS~NITRATE~1/}$ 

# (Kilograms)

Period and country	Bullion (silver content)	Doré (silver content)	Total (silver content)	Other unwrought silver (gross weight)	Metal powder (gross weight)	Silver nitrate
Imports for consumption:	(sirver content)	(SHVCI COIRCIR)	(SHVCI COILCIL)	(gross weight)	(gross weight)	(gross weight)
1998	2,800,000	340,000	3,140,000	102,000	129,000	8,030
1998	_ 2,800,000	340,000	3,140,000	102,000	129,000	8,030
June	226,000	39,100	265,000	6,360 2/	14,900	40
-			,	,	,	
July	248,000	29,700	278,000	27,100	3,240	1,230
August:	_		60,000	20.000		4.0
Canada	_ 69,800		69,800	20,900		46
Chile	_ 2,450	16,000	18,400			
Colombia		59	59			
Germany					461	
Japan				<del></del>	6,480	
Malaysia	_				750	
Mexico	_ 59,500	8,250	67,700	208		
Peru	21,800	1,610	23,500			
Other		36	36	15	15	
Total	154,000	25,900	180,000	21,200	7,710	46
Year to date	1,810,000	341,000	2,150,000	93,000 2/	78,900	3,020
Exports:						
1998	2,250,000	241,000	2,490,000	39,900	299,000	164,000
1999:	_	,		,	•	ŕ
June	41,000	12,100	53,100	3,370	33,800	1,480
July	57,500	3,180	60,700	3,340	25,100	1,990
August:		3,100	00,700	5,5.0	20,100	1,,,,
Australia					47	725
Austria					58	
Canada	- 78		78	8,740	883	768
China			70		300	960
Denmark				64	300	
France	- <del>-</del>	<del></del>	<del></del>		533	
Germany					7,580	
Hong Kong			<del></del>	<del></del>	1,210	
Ireland					202	
Japan					7,160	
Korea, Republic of				23	179	
Mexico	_ 1,290		1,290	38	20	380
Netherlands	_			13	1,670	
Singapore					163	
South Africa				212		
Switzerland		1,430	1,430			
Taiwan				327	1,160	80
Thailand				859	27	
United Arab Emirates						
United Kingdom				212	1,860	
Other	- 				-,=00	6
Total	1,370	1,430	2,800	10,500	23,100	2,920
Year to date	425,000	54,000	479,000	52,000	214,000	26,600

<sup>1/</sup> Data are rounded to three significant digits; may not add to totals shown.

<sup>2/</sup> All or part of these data have been referred to the Bureau of the Census for verification.

 ${\bf TABLE~5} \\ {\bf U.S.~IMPORTS~AND~EXPORTS~OF~SILVER,~RAW,~SEMIMANUFACTURED,~AND~WASTE~AND~SCRAP~} 1/$ 

(Kilograms of silver content, unless otherwise specified)

Period and country	Silver ores and concentrates	Base metal ores and concentrates	Ash and residues	Total	Semimanu- factured form 2/3/ (gross weight)	Waste and scrap (gross weight)
Imports for consumption:	concentrates	concentrates	residues	Total	(gross weight)	(gross weight)
1998	181,000	14,200	47,200	243,000	181,000	1,800,000
1999:	_ 101,000	14,200	47,200	243,000	161,000	1,000,000
June	124		3,980	4,110	12,500	154,000
July	124	<del></del>	6,330	6,330	1,680	102,000
	- =		0,330	0,330	1,000	102,000
August:	=		100	100		
Australia			199	199		
Canada		==	1,940	1,940	461	71,200
Costa Rica						450
Dominican Republic	<del></del>					773
Germany					555	31,900
Hong Kong						5,590
Ireland						157
Japan					161	
Korea, Republic of						1,420
Malaysia						7,960
Mexico					2,380	9,460
Peru	- 	2,750		2,750	´	4,010
United Kingdom	- 				135	52,100
Other	- 				39	16
Total	- <del></del>	2,750	2,140	4,890	3,740	185,000
Year to date	10,600	2,750	75,900	89,200	69,100	1,300,000
Exports:	_ 10,000	2,730	75,900	89,200	09,100	1,300,000
1998	6,540			6,540	154,000	1 060 000
1998:	- 0,340			0,340	134,000	1,060,000
	- 50			50	10.000	120,000
June	_ 58			58	10,800	128,000
July	4,690			4,690	11,100	82,100
August:	_					
Belgium					362	8,790
Brazil	_ <del></del>				66	
Canada					1,580	34,500
China						9,650
France					61	
Germany					456	14,300
Hong Kong					170	242
India						196
Italy	- 				357	2,460
Japan	- 23			23	98	1,800
Korea, Republic of	- 				54	
Malaysia	- 9			9	138	
Mexico					5,010	
New Zealand	-				53	
Singapore	-				102	
	-					
South Africa					 637	4,000
Spain	- <del></del>				637	2.020
Sweden	<del></del>					2,820
Switzerland	- -				18	70
Taiwan	_ 17			17	1,730	
United Kingdom					216	1,580
Other					199	50
Total	_ 48			48	11,300	80,500
Year to date	53,700			53,700	84,100	905,000

<sup>1/</sup> Data are rounded to three significant digits; may not add to totals shown.

<sup>2/</sup> Containing 99.5% or more by weight of silver. Imports only.

<sup>3/</sup> Semimanufactured (including silver plated with gold or platinum) forms of silver.

TABLE 6 U.S. IMPORTS OF PLATINUM-GROUP METALS 1/

(Kilograms of metal content, unless otherwise specified)

	Platinum		Other		Platinum							
	grain and	Platinum	unwrought	Platinum,	waste and	Platinum	Unwrought				Unwrought	
Period and country	nuggets	sponge	platinum	other	scrap	coins	palladium	other	Iridium 2/	osmium	ruthenium	Rhodium 3/
Imports for consumption:												
1998	2,670	72,700	10,200	11,200	3,580	451	160,000	16,300	1,950	71	8,880	13,400
1999:												
June	732	6,260	360	661	177	3	8,250	2,380	323		1,000	1,350
July	285	3,720	310	432	994	76	6,020	2,320	150	18	655	586
August:												
Australia				714		2						
Belgium	17	121	73				1,490	200				48
Brazil				92								
Canada	18			209	26		225					
China							99	43				
Colombia			61									
Costa Rica												
Dominican Republic												
France					15				3		402	12
Germany	103	312	59	167			303	313	11		31	7
Gibraltar						1						
Hong Kong												
India		17										
Israel			9									
Italy	13	52					18					(4/)
Japan	23			17			546	3				8
Korea, Republic of												
Malaysia					2							
Mexico	6				8		3					6
Mongolia						(4/)						
Netherlands				2								
Norway		19					188					2
Russia	5		319	2,090			2,720	1,670			400	
Saudi Arabia		35		-,			35					
Singapore				21								
South Africa	1	10,300	7				416	47	23		243	403
Spain		3										
Switzerland		174	3	149			(4/)	288				(4/
United Kingdom		449	(4/)	54	59		951	(4/)	113			323
Total	186	11,500	531	3,520	111	2	6,990	2,560	151		1,090	808
Year to date	2,350	47,400	4,350	13,800	3,840	127	111,000	17,000	1,600	23	6,490	8,050

<sup>1/</sup> Data are rounded to three significant digits; may not add to totals shown.
2/ Unwrought and other forms of iridium.
3/ Unwrought and other forms of rhodium.

<sup>4/</sup> Less than 1/2 unit.

# TABLE 7 U.S. EXPORTS OF PLATINUM GROUP METALS 1/

(Kilograms of metal content, unless otherwise specified)

Period and country	Palladium 2/	Platinum 2/	Platinum waste and scrap	Iridium osmium and ruthenium 2/ 3/	Rhodium 2/
Exports:	T unudrum 2/	Tradition 2/	зегир	rationali 2/ 3/	renourani 2/
1998	36,700	14,300	6,570	905	811
1999:	. 30,700	11,500	0,570	703	01.
June	3,150	2,140	1,060	94	4
July	4,000	2,730	733	138	14
August:					
Australia	4	6			_
Belgium	13	1	33		_
Canada	35	72	29	16	(4/
Chile		31			_
China	485				_
Denmark	2	1			_
France	12	9		1	(4/
Germany	86	56	79		(4/
Guatemala	. 19				_
Haiti	2				_
Hong Kong	. <u>2</u>	(4/)			(4/
India	4	(4/)			(4/
Ireland	. <del>-</del>	14			(4/
Israel	425	5			_
Italy	. 423	9	(4/)		-
Japan	437	113	(4/)	5	(4/
Korea, Republic of	. 437	113	<del></del>	1	(4/
Kuwait	(4/)		<del></del>	1	-
Lebanon	. (4/)		<del></del>	<del></del>	
Luxembourg	2				(4/
	3				-
Malaysia		10			-
Mexico	. 7	8			-
Netherlands	106	17			-
New Zealand	. 3	2			
Philippines	. 7				-
Singapore	. 13	2			-
South Africa	. 1				
Sweden	. 11	7	1		-
Switzerland	. 10	3	(4/)		-
Taiwan	1,520	1			-
Thailand	. 6	1			(4/
Turkey	<del></del>	1			-
United Arab Emirates					(4/
United Kingdom	. 56	108	889	17	-
Venezuela	<u> </u>	10			
Total	3,370	486	1,030	39	:
Year to date	26,000 5/	13,100	4,640	541	6

<sup>1/</sup> Data are rounded to three significant digits; may not add to totals shown.

<sup>2/</sup> Unwrought and other forms.

<sup>3/</sup> Gross weight.

<sup>4/</sup> Less than 1/2 unit.

<sup>5/</sup> All or part of these data have been referred to the Bureau of the Census for verification.